SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT

SVNIT

No: Dean(Acad.)/IAAC/4019 /2022-23 Date: 05/08/2022

The minutes of the 57th meeting of the Institute Academic Advisory Committee (IAAC)

The aforesaid meeting was held on 22nd July 2022, 11:30 am onwards in the Institute Conference room, first floor, Administrative Building. The following members attended the IAAC meeting.

Sr. No.	Name	Designation
1	Dr. Anupam Shukla	Director, ***Chairman***
2	Dr. P. L. Patel	Deputy Director
3	Dr. C.D. Modhera	Dean (Faculty Welfare)
4	Dr. D.C. Jinwala	Dean (Research and Consultancy)
5	Dr. Ravi Kant	Dean (Students' Welfare)
6	Dr. M. A. Desai	Head, Department of Chemical Engineering
7	Dr. G. J. Joshi	Head, Department of Civil Engineering
8	Dr. R.G. Mehta	Head, Department of Computer Science and Engineering
9	Dr. A.K. Panchal	Head, Department of Electrical Engineering
10	Dr. P. N. Patel	Head, Department of Electronics Engineering
11	Dr. Jyotirmay Banerjee	Head, Department of Mechanical Engineering
12	Dr. B. Z. Dholakia	I/C Head, Department of Chemistry
13	Dr. Jayesh M. Dhodiya	Head, Department of Mathematics and Humanities
14	Dr. Dimple V. Shah	Head, Department of Physics
15	Dr. R. D. Shah	Associate Dean (Academic)
16	Dr. S. R. Patel	Associate Dean (Students' Welfare)
17	Dr. Y.D. Patil	Associate Dean (Planning and Development)
18	Dr. K. D. Yadav	Associate Dean (Research and Consultancy)
19	Dr. H.B. Mehta	Associate Dean (Research and Consultancy)
20	Dr. S. N. Sharma	Dean (Academic), ***Member-Secretary***
Invitee(s)		
21	Shri Amit C. Patel	In-Charge Deputy Registrar (Academic)

The following could not attend the meeting.

Sr. No.	Name	Designation
1	Dr. Pramod Mathur	Registrar
2	Dr. V. L. Manekar	Dean (Planning and Development)
3	Dr. P.V. Timbadiya	Dean (Alumni and Resource Generation)
4	Dr. Sushil Kumar	Associate Dean (Faculty Welfare)
5	Dr. S.S. Arkatkar	Associate Dean (Planning and Development)
6	Dr. D.R. Roy	Associate Dean (Academic)

Items and Resolutions

Item 1	To discuss and adopt resolutions about 'the proposed revised curricula of the 'six' M. Tech. Programmes of the Department of Civil Engineering. The DAAC (Civil Engineering) recommended the revised curricula of the following M. Tech. specializations for the consideration of the IAAC: Environmental Engineering, Urban Planning, Water Resources Engineering, 'Transportation Engineering and Planning', Structural Engineering and Geotechnical Engineering (resolution no. 47.6 of the 47th meeting of the DAAC held on 10/06/2022). **Annexure 1.** This revision is made following the resolution 7 of the 51st meeting of the Senate that discusses the credit range and structural refinements etc. https://www.svnit.ac.in/Data/minutes/senate/51st%20Minutes.pdf
Reso. 1	The revised curricula of the six M Tech programmes of the Department of Civil Engineering were discussed in the IAAC. Towards the implementation of the revised curricula of the six M. Tech. programmes (Environmental Engineering, Urban Planning, Water Resources Engineering, 'Transportation Engineering and Planning', Structural Engineering and Geotechnical Engineering) from the AY 2022-23 onwards, it was resolved to recommend the concerning revised curricula for the consideration of the Senate. Besides the above, the proposal of restructuring the existing programme 'M.Tech. in Civil Engineering with Specialization in Urban Planning' by replacing the programme 'M. Tech.' with 'M. Plan.' would be effective from the Academic Year 2023-24 onwards after the completion of the applicable procedural requirements, including its entry in the CCMT 2023 seat matrix. The IAAC recommended for re-examining the course codes of the revised Curricula for revising and making them more revealing.
Item 2	To consider a request of Agarkar Vrunda Hemant (DS14AM007), enrolled in the PEC category and working under the supervision of Dr.A. K. Desai (Professor, Department of Civil Engineering), for the PhD thesis submission. The Scholar has completed the seven-and half-year duration (the extended duration for the COVID reason) on **July 13, 2022** (resolution no. 47.11 of the 47th meeting of the DAAC held on 10/06/2022).
Reso. 2	The status and progresses of the PhD student (item 2) towards the PhD thesis submission were discussed. The following were resolved. (i) The research Scholar would meet two Journal publication requirements (resolution 18th of the minutes of the meeting of the 32nd

	Senate held on 15th February 2014), including the requirements of RPS, pre-synopsis seminar, synopsis and thesis submissions, **on or before January 02, 2023**. This resolution is under a 'special case consideration'.
Item 3	To consider a request of Vaghela Ajaysinh Ranjitsinh (DS14AM006), enrolled in the PEC category and working under the supervision of Dr. G.R. Vesmawala (Associate Professor, Department of Civil Engineering) for the PhD thesis submission. The Scholar has completed the seven-and half-year duration (the extended duration for the COVID reason) on **July 13, 2022** (special DAAC meeting held on 18/07/2022).
Reso. 3	The status and progresses of the PhD student (item 3) towards the PhD thesis submission were discussed. The semester registration is a pre-requirement of the academic activities. The IAAC suggested for the registration of the Research Scholar with late fee because of the semester non-registration status of the Scholar yet. Further, it was recommended that the research Scholar would meet two Journal publication requirements (resolution 18th of minutes of the 32nd meeting of the Senate held on 15th February 2014), including the requirements of pre-synopsis seminar, synopsis and thesis submissions, **on or before January 02, 2023**. This resolution is under a 'special case consideration'.
Item 4	To discuss and adopt resolutions about 'the proposed revised curricula of the 'five' M. Tech. Programmes of the Department of Mechanical Engineering. The DAAC (Mechanical Engineering) recommended the revised curricula of the following M Tech specializations for the consideration of the IAAC: Manufacturing Engineering, CAD-CAM, Thermal Systems Design, Turbomachines, Mechanical Engineering (resolutions 63.2, 63.3, 63.4, 63.5 & 63.6 of the DAAC held on 18/05/2022). **Annexure 2.** This revision is made following the resolution 7 of the 51st meeting of the Senate that discusses the credit range and structural refinements etc. https://www.svnit.ac.in/Data/minutes/senate/51st%20Minutes.pdf
Reso. 4	The revised curricula of the five M Tech programmes of the Department of Mechanical Engineering were discussed in the IAAC. Towards the implementation of the revised curricula of the five M. Tech. programmes (Manufacturing Engineering, CAD-CAM, Thermal Systems Design, Turbomachines, Mechanical Engineering) from the AY 2022-23 onwards, it was resolved to recommend the concerning revised curricula for the consideration of the Senate. The IAAC recommended for re-examining the course codes of the revised Curricula for revising and making them more revealing as well.
Item 5	To consider a request of Shah Maitrik Kaushikbhai (DS14ME001), enrolled in the PEC category and working under the supervision of Dr. Beena D. Baloni (Associate Professor, Department of Mechanical Engineering) and Professor S. A. Channiwala, for the PhD thesis submission. The Scholar has completed the seven-and half-year duration (the extended duration for the COVID reason) on **July 09, 2022** (the DAAC meeting held on 19/7/2022).
Reso. 5	The status and progresses of the PhD student (item 5) towards the PhD thesis submission were discussed. It was recommended that the research Scholar would meet two Journal publication requirements (resolution 18th of the minutes of the 32nd meeting of the Senate held on 15th February 2014), including the requirements of RPS, pre-synopsis seminar, synopsis and thesis submissions, **on or before January 02, 2023**. This resolution is under a 'special case consideration'.
Item 6	To discuss the creation of new Academic Departments by additions, bifurcations and restructuring of the Academic Departments to run new Academic programmes to meet the

	contemporary global requirements as well as societal aspirations. The sanctioned intake, Faculty strength and resource requirements, including space allocations, etc. are the subject of discussions.
Reso. 6	Contemplated and resolved. It was resolved to bifurcate the existing 'Department of Mathematics and Humanities'. That would result in three Academic Departments, i.e. Department of Mathematics, 'Department of Humanities and Social Sciences' and School of Management. Regarding the Academic programmes and their national status, the on-going programmes under the aegis of the Departments of Mathematics were consulted, e.g. https://maths.iitd.ac.in/drupal/Undergraduate https://www.iitg.ac.in/maths/ The following were resolved. The new academic programme associated with the Department of Mathematics of SVNIT would be 'Bachelor of Technology in Mathematics and Computing' (MaC) of the four-year duration. The objective of the MaC programme is to achieve the balance between the theoretical and computational aspects of Mathematics addressing the formidability of the tomorrow's challenges. This would create opportunities for the MaC graduate students with diversity, e.g. finance, analytics, consulting, cryptography-based security and information technology. It was decided to complete the design of the curriculum of the MaC programme, including the resource requirements, by the end of December 2022. That would be enrouted via the Academic Bodies of the Institute. Regarding the Academic Programme within the School of Management (mentioned above), it was resolved to run a five-year integrated MBA programme with the blend of 'Information Technology and Management techniques'. It was decided to complete the design of the curriculum of the above-mentioned Management programme, including the requirements, by the end of December 2022. That would be enrouted via the Academic Bodies of the Institute.
	Items from the Chair
Item 7	About more clarity regarding the appointment of Research Progress Seminar (RPS) Chairman.
Reso. 7	The RPS committee is formed by the DAAC Chairman of the respective Department (Reference 11.2(b) (iv) of the Academic Regulations for Doctoral Programmes, July 2019 onwards). It was decided to appoint the Chairman of the RPS Committee from other Departments at the level of Associate Professor and beyond.
Item 8	About more clarity for strength of students deputed for 25% Industry Internships in the 2nd year of the M. Tech. Programme
Reso. 8	It was decided that Students would be encouraged to take up the aforesaid Industry internship. Furthermore, the ceiling cap of 25% 'mentioned in the 21st resolution of the 34th meeting of the IAAC held on 2nd February, 2018' is not applicable.

Member-Secretary, IAAC

Director 5/8/22.

Annexure 1

Teaching and Examination Schemes with Syllabus

of

Master of Technology

in

(Civil) Environmental Engineering

(Effective 2022-23)

(Approved by the Senate dated ----------)

Department of Civil Engineering
SardarVallabhbhai National Institute of Technology, Surat

Teaching Scheme
M.Tech. in (Civil) Environmental Engineering

SEMESTER – I

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Tutorial	Practical (ICE + ESE)	
1	Physico-Chemical Processes	CE601	3	1	0	4	100	25	-	125
2	Biological Processes	CE603	3	1	0	4	100	25	-	125
3	Environmental Chemistry and Microbiology	CE605	4	0	0	4	100	-	-	100
4	Solid and Hazardous Waste Management	CE607	3	1	0	4	100	25	-	125
5	Core Elective – 1		3	0	0	3	100	-	-	100
6	Environmental Eng .Laboratoary	CE609	0	0	4	2	-	-	40+60	100
7	Seminar	CE611	0	0	2	1	-	-	20+30	50
		Total	**16**	**3**	**6**	**22**	**500**	**75**	**150**	**725**

Core Elective 1

CE613 Noise, Indoor Air and Odour Pollution
CE615 Sustainable Waste Management System
CE617 Environmental Hydraulics
CE619 GIS and Remote Sensing in Environmental Engineering

SEMESTER – II

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Tutorial	Practical (ICE + ESE)	
1	Air Pollution and Control	CE602	3	1	0	4	100	25	-	125
2	Environmental Legislation and Impact Assessment	CE604	3	0	0	3	100	-	-	100
3	Core Elective-2		3	0	0	3	100	-	-	100
4	Core Elective-3		3	0	0	3	100	-	-	100
5	Open Elective		3	0	0	3	100	-	-	100
6	Advanced Environmental Eng. Laboratory	CE606	0	0	4	2	-		40+60	100
7	Environmental Modelling and Software Laboratory	CE608	0	0	4	2	-	-	40+60	100
		Total	**15**	**1**	**8**	**20**	**500**	**25**	**200**	**725**

Core Elective 2

CE610 Applied Statistics for Engineers
CE612 Occupational Health, Safety and Environment
CE614 Waste-to-Energy Technologies
CE616 Advanced Water and Wastewater Treatment

Core Elective 3

CE618 Industrial WasteManagement
CE620 Environmental System Modelling
CE622 Environmental Ethics, Law & Policy
CE624 Cleaner Production and Environmental Management System

Open Elective

CE604 Environmental Legislation and Impact Assessment
CE610 Applied Statistics for Engineers
CE612 Occupational Health, Safety and Environment
CE614 Waste-to-Energy Technologies
CEEC730 AI/ML Based Applications in Civil Engineering

SEMESTER – III

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Tutorial	Practical (ICE + ESE)	
1	Group Project	CE831	0	0	4	2	-	-	40+60	100
2	Summer Training	CE833	0	0	0	2	-	-	40+60	100
3	Dissertation Preliminary	CE835	0	0	12	6	-	-	80+120	200
		Total	**0**	**0**	**16**	**10**	**0**	**0**	**400**	**400**

SEMESTER – IV

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Tutorial	Practical (ICE + ESE)	
1	Dissertation	CE832	0	0	24	12	-	-	160+240	400
		Total	**0**	**0**	**24**	**12**	**-**	**-**	**160+240**	**400**

Total Credits: 64

Teaching and Examination Schemes with Syllabus

of

Master of Technology

in

(Civil) Geotechnical Engineering

(Effective 2022-23)

(Approved by Senate dated .....)

Department of Civil Engineering
Sardar Vallabhbhai National Institute of Technology, Surat

Teaching Scheme
M.Tech. in (Civil) Geotechnical Engineering

SEMESTER - I

Sr. No.	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract.	
			L	T	P		Mark	Mark	Mark	
1	Advanced Foundation Engineering	CE761	3	1	0	04	100	25	-	125
2	Slope stability and Retaining structures	CE763	3	1	0	04	100	25	-	125
3	Advanced Soil mechanics	CE765	3	1	0	04	100	25	-	125
4	Core Elective-1		3	0	0	03	100	-	-	100
5	Core Elective-2		3	0	0	03	100	-	-	100
6	Geotechnical Engineering laboratory	CE779	0	0	4	02	-	-	100 (40*+60**)	100
		Total	**15**	**3**	**4**	**20**	**500**	**75**	**100**	**675**

Total Contact Hours/week=22

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)

Core Elective - 1 : (i) Geosynthetics & Reinforced Soil Structure (CE767)

(ii) Soil Structure Interaction (CE769)

(iii) Research Analytical Methods (CE 771)

(iv) Theory of Elasticity & Plasticity (CE803)

Core Elective - 2 : (i) Rock Mechanics (CE773)

(ii) Constitutive Modelling in Geomechanics (CE775)

(iii) Low Cost Construction (CE726)

(iv) Pavement analysis and Design (CE777)

Allotment of elective

The choice of the elective courses is primarily based on the interest of the students. Faculties offering the respective elective subject interact with all students and brief out the content with

relevance of the subject in field or in research. On the basis of merit, students are given the freedom to select the elective of their choice. Emphasize is made to offer maximum number of electives in each semester, however, at least 6 students need to opt a certain elective to run it.

SEMESTER – II

Sr. No.	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract.	
			L	T	P		Mark	Mark	Mark	
1	Finite Element Method in Geotechnical Engineering	CE762	3	1	0	04	100	25	-	125
2	Ground Improvement Techniques	CE764	3	1	0	04	100	25	-	125
3	Soil Dynamics & Earthquake Geotechnics	CE766	3	1	0	04	100	25	-	125
4	Core Elective-3		3	0	0	03	100	-	-	100
5	Institute Elective		3	0	0	03	100	-	-	100
6	Numerical Modelling in Geomechanics	CE776	0	0	4	02	-	-	100 (40*+60**)	100
		Total	**15**	**3**	**4**	**20**	**500**	**75**	**100**	**675**

Total Contact Hours/week=22

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)

Core Elective - 3 : (i) Environmental Geotechnology (CE768)

(ii) Tunneling and Underground Structures (CE770)

(iii) Structural Geology (CE772)

(iv) Foundation Design of Structures & Soil-structure Interaction (CE808)

Institute (Open) Elective: (i) Soil Exploration and Field Tests (CE774)

(ii) AI/ML Based Applications in Civil Engineering (CEEC730)

Allotment of elective

The choice of the elective courses is primarily based on the interest of the students. Faculties offering the respective elective subject interact with all students and brief out the content with relevance of the subject in field or in research. On the basis of merit, students are given the

freedom to select the elective of their choice. Emphasize is made to offer maximum number of electives in each semester, however, at least 6 students need to opt a certain elective to run it.

SEMESTER – III

Sr. No.	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract.	
			L	T	P		Mark	Mark	Mark	
1	Summer Training	CE881	0	0	0	02	-	-	100 (40*+60**)	100
2	Seminar	CE883	0	0	4	02	-	-	100 (40*+60**)	100
3	Dissertation Preliminaries	CE885	0	0	12	06	-	-	200 (80*+120**)	200
	Total		0	0	16	10		-	400	400

Total Contact Hours/week=16

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)

SEMESTER – IV

Sr. No.	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract.	
			L	T	P		Mark	Mark	Mark	
1	Dissertation	CE882	0	0	24	12	-	-	400 (140*+260**)	400
	Total		**0**	**0**	**24**	**12**	**-**	**-**	**400**	**400**

Total Contact Hours/week=24

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)

Total Credits = 62

Teaching and Examination Schemes with Syllabus

of

Master of Technology

in

Civil Engineering

With specialization in

Structural Engineering

(Effective from _____)

Department of Civil Engineering

Sardar Vallabhbhai National Institute of Technology, Surat

TEACHING SCHEME OF M. TECH. (Structural Engineering)

SEMESTER - I

Sr. No.	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract.	
			L	T	P		Mark	Mark	Mark	
1	Structural Dynamics	CE791	3	1	0	04	100	25	-	125
2	Computer Methods of Analysis	CE793	3	1	0	04	100	25	-	125
3	Experimental Stress Analysis	CE795	3	1	0	04	100	25	-	125
4	Core Elective I#		3	0	0	03	100	-	-	100
5	Core Elective II#		3	0	0	03	100	-	-	100
6	Structural Engineering Lab	CE797	0	0	4	02	-	-	100 40+60 * **	100
					Total	**20**	**500**	**100**	**100**	**700**
# Student can opt any one elective subject from the subject list mentioned below.										

Total Contact Hours/week=22

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)

Core Elective-1

1. CE799 Advanced Design of Steel Structures
2. CE801 Numerical Methods for Structural Analysis
3. CE803 Theory of Elasticity & Plasticity
4. CE805 Wind Engineering

Core Elective-2

1. CE807 Conceptual Design of Tall Structures
2. CE809 Advanced Concrete Technology
3. CE811 Advanced Construction Materials
4. CE813 Theory of Plates and Shells
5. CE815 Cold Formed Steel Design

SEMESTER – II

Sr. No.	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract.	
			L	T	P		Mark	Mark	Mark	
1	Advanced Design of Concrete Structures	CE792	3	1	0	04	100	25	-	125
2	Earthquake Resistant Design of Structures	CE794	3	1	0	04	100	25	-	125
3	Finite Element Methods in Structural Engineering	CE796	3	1	0	04	100	25	-	125
4	Core Elective III[#]		3	0	0	03	100	-	-	100
5	Open Elective[#]		3	0	0	03	100	-	-	100
6	Computer Modelling, Analysis and Design Lab	CE798	0	0	4	02	-	-	100 (40+60) * **	100
					Total	**20**	**500**	**150**	**100**	**750**
# Student can opt any one elective subject from the subject list mentioned below.										

Total Contact Hours/week=22

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)

Core Elective -3

1. CE802 Nonlinear Analysis of Frame Buildings
2. CE804 Mechanics of Composite Materials
3. CE806 Design of Prestressed Concrete Structures
4. CE808 Foundation Design of Structures & Soil-structure Interaction
5. CE810 Design of Bridge Structures
6. CE812 Structural Vibration Control

Open Elective

1. CE814 Rehabilitation of Concrete Structures
2. CE816 Fire Resistant Design of Buildings
3. CE818 Design of Formwork systems
4. CE820 Continuum Mechanics
5. CEEC730 AI/ML Based Applications in Civil Engineering

SEMESTER – III

Sr. No	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract	
			L	T	P		Mark	Mark	Mark	
1	Seminar	CE891	0	0	4	02	-	-	100 (40+60) * **	100
2	Summer Training##	CE893	0	0	0	02	-	-	100 (40+60) * **	100
3	Dissertation Preliminaries	CE895	0	0	12	06	-	-	200 (80+120) * **	200
					Total	**10**	**-**	**-**	**300**	**300**

Total Contact Hours/week=16

*ICE (Internal Continuous Evaluation) & **ESE (End Semester Evaluation)
Summer Training during summer vacation

SEMESTER – IV

Sr. No	Course	Code	Scheme			Credit	Examination Scheme			Total
							Theory	Tuto.	Pract	
			L	T	P		Mark	Mark	Mark	
1	Dissertation	CE892	0	0	24	12	-	-	400 (160+240) $ $$	400
					Total	**12**	**-**	**-**	**400**	**400**

Total Contact Hours/week=24

$ Internal Evaluation
$$ External Evaluation

TOTAL CREDITS OF THE PROGRAM = 62

Teaching and Examination Schemes with Syllabus as Per New Structure

of

Master of Technology

in

Civil Engineering with Specialization in Transportation Engineering and Planning

(Revised in Curriculum Revision Workshop on May 19, 2022)

Department of Civil Engineering
Sardar Vallabhbhai National Institute of Technology, Surat

Teaching Scheme
M.Tech. in (Civil) Transportation Engineering and Planning

SEMESTER – I

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total
			L	T	P		Theory	Tutorial	Practical	
1	Research Analytical Methods	CE691	3	1	0	4	100	25	0	125
2	Urban Transport Systems Planning	CE693	3	1	0	4	100	25	0	125
3	Pavement Analysis and Design	CE695	3	1	0	4	100	25	0	125
4	Core Elective-I		3	0	0	3	100	0	0	100
5	Core Elective-II		3	0	0	3	100	0	0	100
6	Transportation Software Laboratory I	CE697	0	0	4	2	0	0	(100) 50*+50#	100
7	Laboratory Practices in Transportation Planning	CE699	0	0	4	2	0	0	(100) 50*+50#	100
		Total	**15**	**3**	**8**	**22**	**500**	**75**	**200**	**775**

Total Contact Hours/week = 26; Total Credits = 22

*Marks for ICE (Internal Continuous Evaluation); # Marks for ESE (End Semester Evaluation)

Core Elective-I

CE701 Low Volume Roads
CE703 Transportation System Analysis
CE705 Sustainable Transportation
CE767 Geosynthetics and Reinforced Soil Structures
CE707 Highway geometric Design
CE709 Geospatial Techniques in Transportation Engineering

Core Elective-II

CE711 Airport Infrastructure Planning and Design
CE713 Railways Infrastructure Planning & Design
CE715 Pavement Materials
CE717 Waterways Infrastructure Planning & Design
CE719 Transport Economics

SEMESTER – II

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total
			L	T	P		Theory	Tutorial	Practical	
1	Regional Transport Systems Planning	CE692	3	1	0	4	100	25	0	125
2	Pavement Construction and Evaluation	CE694	3	0	0	3	100	0	0	100
3	Traffic Engineering and Management	CE696	3	1	0	4	100	25	0	125
4	Core Elective-III		3	0	0	3	100	0	0	100
5	Institute Elective		3	0	0	3	100	0	0	100
6	Transportation Software Laboratory II	CE698	0	0	4	2	0	0	(100) 50*+50#	100
7	Laboratory Practices in Highway Engineering - II	CE700	0	0	4	2	0	0	(100) 50*+50#	100
8	Seminar	CE702	0	0	2	1	0	0	(50) 20* + 30#	50
		Total	**15**	**2**	**10**	**22**	**500**	**50**	**250**	**800**

Total Contact Hours/week = 27; Total Credits = 22

*Marks for ICE (Internal Continuous Evaluation); # Marks for ESE (End Semester Evaluation)

Core Elective-III

CE704 Freight Transportation Planning
CE706 Public Transport Planning
CE708 Traffic Flow Theory
CE710 Road Safety and Environment
CE712 Transportation Network Analysis
CE714 Operation & Maintenance Management of Pavements
CE764 Ground Improvement Techniques
CE770 Tunneling and Underground Structures

Institute Elective offered by TEP section:

CE716 Project Appraisal & Finance
CE718 Soft Computing Techniques
CE720 Intelligent Transport System
CE722 Communication Skills
CE730 AI/ML Based Applications In Civil Engineering

Institute Electives adopted by TEP section offered by other sections of Department:

Climate Change Studies
Soil Exploration and Field Testing
Environment Legislation and Impact Assessment
Occupational, Health, Safety and Environment

SEMESTER – III

Sr. No.	Course	Code	Teaching Scheme			Credit	Examination Scheme			Total
			L	T	P		Theory	Tutorial	Practical	
1	Summer Training	CE861	0	0	0	2	0	0	(100) 50*+50#	100
2	Dissertation Preliminaries	CE863	0	0	12	6	0	0	(200) 80* + 120#	200
3	Transportation Project	CE865	0	0	4	2	0	0	(100) 50*+50#	100
		Total	**0**	**0**	**16**	**10**	**0**	**0**	**400**	**400**

Total Contact Hours/week = 16; Total Credits = 10

*Marks for ICE (Internal Continuous Evaluation); # Marks for ESE (End Semester Evaluation)

SEMESTER – IV

Sr. No.	Course	Code	Teaching Scheme			Credit	Examination Scheme			Total
			L	T	P		Theory	Tutorial	Practical	
1	Dissertation	CE862	0	0	24	12	0	0	(400) 160*+240#	400
		Total	**0**	**0**	**24**	**12**	**0**	**0**	**400**	**400**

Total Contact Hours/week = 24; Total Credits = 12

*Marks for ICE (Internal Continuous Evaluation); # Marks for ESE (End Semester Evaluation)

REVISED CIRRICULUM OF M. Plan.

(URBAN PLANNING)

(WITH EFFECT FROM JULY 2022)

P.G Section (Urban Planning)
Department of Civil Engineering
Urban Planning Section
Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat

DEPARTMENT OF CIVIL ENGINEERING

TEACHING SCHEME OF M. TECH. (URBAN PLANNING)

M. Tech.-I (Semester I & II)

SEMESTER – I

Sr. No.	Subject	Code	Scheme	Credit
1	Urban Planning Fundamentals	CE–631	3-0-2	04
2	Housing	CE-633	3-0-2	04
3	Traffic and Transportation Planning	CE-635	3-1-0	04
4	Core Elective-1	-	3-0-0	03
5	Core Elective-2	-	3-0-0	03
6	Planning Studio - I	CE–637	0-0-4	02
7	Planning Studio - II	CE-639	0-0-4	02
		Total	**15-1-12=28**	**22**

SEMESTER – II

Sr. No.	Subject	Code	Scheme	Credit
1	Urban Infrastructure Planning & Management	CE–634	3-1-0	04
2	Urban Governance and Legislation	CE–638	3-1-0	04
3	Core Elective-3	-	3-0-0	03
4	Core Elective-4	-	3-0-0	03
5	Institute Elective-1	-	3-0-0	03
6	Planning Studio - III	CE–640	0-0-4	02
7	Planning Studio - IV	CE–642	0-0-4	02
		Total	**15-2-8=25**	**21**

M. Tech.-II (Semester III & IV)

SEMESTER – III

Sr. No.	Subject	Code	Scheme	Credit
1	Seminar	CE-827	0-0-2	01
2	Summer Training	CE-829	0-0-0	02
3	Dissertation Preliminaries	CE-825	0-0-12	06
4	Design Portfolio	CE-823	0-0-8	04
		Total	**0-0-22**	**13**

SEMESTER – IV

Sr. No.	Subject	Code	Scheme	Credit
1	Dissertation	CE-822	0-0-24	12
		Total	**0-0-24=24**	**12**

Total Credits – 68

Proposed
Teaching and Examination Schemes with Syllabus as per new structure

of

Master of Technology in Civil Engineering with Specialization in Water Resources Engineering

Department of Civil Engineering
Sardar Vallabhbhai National Institute of Technology, Surat

Teaching Scheme

M.Tech. in (Civil Engineering) with Specialization in Water Resources Engineering

SEMESTER – I

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Tutorial	Practical	
1	Advanced Fluid Mechanics (Core-1)	CE661	3	1	0	4	100	25	-	125
2	Free Surface Flow (Core-2)	CE663	3	1	0	4	100	25	-	125
3	Advanced Hydrologic Analysis and Design (Core-3)	CE665	3	1	0	4	100	25	-	125
4	Any one subject out of the list of core electives for Semester I (Core Elective 1)		3	0	0	3	100	-	-	100
5	Any one subject out of the list of core electives for Semester I (Core Elective 2)		3	0	0	3	100	-	-	100
6	Computational Techniques in Water Resources Engineering Laboratory	CE667	0	0	4	2	-	-	100 (40+60) * **	100
7	Hydraulic Engineering Laboratory-I	CE669	0	0	4	2	-	-	100 (40+60) * **	100
		Total	**15**	**3**	**8**	**22**	**500**	**75**	**200**	**775**

List of Core Electives for Semester I

CE671 Computational Techniques in Water Resources Engineering
CE673 Flood Control and River Training Works
CE675 Irrigation and Drainage Systems Engineering
CE677 Integrated Watershed Management
CE679 Stochastic Hydrology
CE681 Water Supply Distribution Systems

Total Contact Hours/week=26 **Total Credits=22**

* Internal Evaluation

** External Evaluation

SEMESTER – II

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Tutorial	Practical	
1	Geospatial Techniques for Water Resources Engineering (Core-4)	CE662	3	0	2	4	100	-	50 (20+30) * **	150
2	Water Resources Systems Engineering (Core-5)	CE664	3	1	0	4	100	25	-	125
3	Any one subject out of the list of core electives for Semester II (Core Elective 3)		3	0	0	3	100	-	-	100
4	Any one subject out of the list of core electives for Semester II (Core Elective 4)		3	0	0	3	100	-	-	100
5	Institute Elective-1		3	0	0	3	100	-	-	100
6	Computational Hydraulics Laboratory	CE666	0	0	4	2	-	-	100 (40+60) * **	100
7	Hydraulic Engineering Laboratory-II	CE668	0	0	4	2	-	-	100 (40+60) * **	100
		Total	**15**	**1**	**10**	**21**	**500**	**25**	**250**	**775**

Total Contact Hours/week=26 **Total Credits=21**

List of Core Electives for Semester-II

CE670 Advanced Hydraulic Structures
CE672 Hydraulics of Alluvial Rivers
CE674 Hydropower Engineering
CE676 Ground Water Engineering
CE678 Computational Hydraulics
CE680 Climate Change Studies
CE682 Water Infrastructure in Smart Cities

Institute Elective 1

CE680 Climate Change Studies #
CE682 Water Infrastructure in Smart Cities#
CEEC730 AI/ML Based Applications in Civil Engineering

other than students of Post graduation programme in Water Resources Engineering. Not as Institute Elective 1 for Water Resources Engineering students.

* Internal Evaluation

** External Evaluation

SEMESTER – III

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Internal	Practical	
1	Seminar	CE851	0	0	4	**2**	-	40 *	60 **	100
2	Professional Training##	CE853	0	0	0	**2**	-	40 *	60 **	100
3	Dissertation Preliminaries	CE855	-	-	12	**6**	-	80 *	120 **	200
		Total	**0**	**0**	**16**	**10**		**160**	**240**	**400**

= summer training during summer vacation

Total Contact Hours/week=16 **Total Credits=10**

* Internal Evaluation

* * External Evaluation

SEMESTER – IV

Sr. No.	Course	Code	Teaching Scheme Hours per week			Credit	Examination Scheme			Total Marks
			L	T	P		Theory	Internal	Practical	
1	Dissertation	CE852	-	-	24	12	-	160	240	400
		Total	**-**	**-**	**24**	**12**	**-**	**-**	**-**	**400**

Total Credits for M. Tech.: 65 (Range: 62-68)

* Internal Evaluation

** External Evaluation

TOTAL CREDIT: 22+21+10+12=65

TOTAL HOURS: 26+26+16+24=92

Annexure 2

DEPARTMENT OF MECHANICAL ENGINEERING

M. Tech. (CAD/CAM)

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY
Ichchhanath, Dumas Road,
Surat- 395007, Gujarat, India

COURSE STRUCTURE FOR M. TECH. (CAD/CAM)

SEMESTER –I

Code №	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MEXXX	**Core 1** Finite Element Methods	3	0	2	3	100	-	50	150	4
MEXXX	**Core 2** Computer Aided Design	3	0	2	3	100	-	50	150	4
MEXXX	**Core 3** Computer Aided Manufacturing	3	0	2	3	100	-	50	150	4
MEXXX	**Core Elective 1** 1. Advanced Mechanics of Solids 2. Product Design and Development 3. Concurrent Engineering: Tools, Techniques and Applications 4. Condition Monitoring and fault diagnosis of Rotating Machinery 5. Material Characterization and Testing	3	0	0	3	100	-	-	100	3
MEXXX	**Core Elective 2** 1. Fracture Mechanics 2. Industrial Robotics 3. Computer Aided Production Planning 4. Design of Pressure Vessels 5. Failure analysis and NDE	3	0	0	3	100	-	-	100	3
MEXXX	**Software Practice 1**	0	0	4	2	-	-	100	100	2
MEXXX	**Laboratory Practice 1**	0	0	4	2	-	-	100	100	2
Total Credits										**22**

SEMESTER –II

Code №	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MEXXX	**Core 1** Computer Aided Machine Design	3	0	2	3	100	-	50	150	4
MEXXX	**Core 2** Rapid prototyping and Tooling	3	0	0	3	100	-	-	100	3
MEXXX	**Core Elective 3** 1. Design of Experiments 2. Instrumentation and Experimental Methods 3. Smart Materials and Manufacturing 4. Computer Aided Tool Design 5. Laser Based Micro Manufacturing 6. Quality Engineering and Management	3	0	0	3	100	-	-	100	3
MEXXX	**Core Elective 4** 1. Optimization Techniques 2. Theory of Elasticity and Plasticity 3. Industrial Tribology 4. Mechanics of composite Materials 5. Surface Engineering	3	0	0	3	100	-	-	100	3
MEXXX	**Institute Elective** 1. Extended Finite Element Methods 2. Computational Fluid Dynamics Techniques	3	0	0	3	100	-	-	100	3
MEXXX	**Software Practice 2**	0	0	4	2	-	-	100	100	2
MEXXX	**Laboratory Practice 2**	0	0	4	2	-	-	100	100	2
Total Credits										**20**

SEMESTER –III

Code No.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MEXXX	Dissertation Preliminaries	0	0	12	-	-	-	300	300	6
MEXXX	Seminar	0	0	4	-	-	-	100	100	2
Total Credits										8

SEMESTER -IV

Code No.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MEXXX	Dissertation	0	0	24	-	-	-	600	600	12
Total Credits										12

CREDIT MATRIX

Category	Credits to be earned				
	Sem- I	Sem - II	Sem- III	Sem - IV	Total
Core Courses	12	7	-	-	19
Elective Courses	6	9	-	-	15
Software/ Laboratory	4	4	-	-	8
Seminar	-	-	2	-	2
Dissertation	-	-	6	12	18
Total Credits	22	20	8	12	62

SCHEME & SYLLABI

for

Master of Technology (Manufacturing Engineering)

(Effective from 2022-23)

Department of Mechanical Engineering

S. V. National Institute of Technology,

Surat – 395007, Gujarat, India

COURSE STRUCTURE FOR
M. TECH.(MANUFACTURING ENGINEERING)

SEMESTER – I

Code No	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MF XXX	**Core 1** Advanced Machining Processes	3	0	2	3	100	-	50	150	4
MF XXX	**Core 2** Sheet Metal Forming	3	1	0	3	100	25	-	125	4
MF XXX	**Core 3** Operation Planning & Control	3	1	0	3	100	25	-	125	4
MF XXX	**Core Elective 1** 1. Advanced Welding Technology 2. Metal Cutting and Tool Design 3. CAD for Manufacturing 4. Theory of Plasticity 5. Manufacturing Metallurgy	3	0	0	3	100	-	-	100	3
MF XXX	**Core Elective 2** 1. Industrial Robotics 2. Advanced Metrology and Computer Aided Inspection 3. Failure Analysis 4. Optimization Techniques 5. Sensors in Manufacturing Systems	3	0	0	3	100	-	-	100	3
MF XXX	**Software Practice - I**	0	0	4	2	-	-	100	100	2
MF XXX	**Laboratory Practice - I**	0	0	4	2	-	-	100	100	2
Total Credits										**22**

SEMESTER – II

Code No	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MF XXX	**Core 4** Computer Integrated Manufacturing	3	0	2	3	100	-	50	150	4
MF XXX	**Core 5** Additive Manufacturing Processes	3	0	2	3	100	-	50	150	4
MF XXX	**Core Elective 3** 1. Metal Casting 2. Finite Element Methods 3. Industrial Tribology 4. Automation in Manufacturing 5. Composite Design and Manufacturing	3	0	0	3	100	-	-	100	3
MF XXX	**Core Elective 4** 1. Surface Engineering 2. Quality Engineering and Management 3. Operations Research 4. Concurrent Engineering 5. Numerical Methods in Manufacturing	3	0	0	3	100	-	-	100	3
MF XXX	**Institute Elective** 1. Non Destructive Testing 2. Intelligent Manufacturing Systems 3. Logistics and Supply Chain Management 4. Micro and Nano Manufacturing 5. Bio Inspired Materials 6. Design of Experiments	3	0	0	3	100	-	-	100	3
ME XXX	**Software Practice - II**	0	0	4	2	-	-	100	100	2
ME XXX	**Laboratory Practice - II**	0	0	4	2	-	-	100	100	2
Total Credits										**21**

SEMESTER – III

CodeNo.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MF XXX	Dissertation Preliminaries	0	0	12	-	-	-	300	300	6
MF XXX	Seminar	0	0	4	-	-	-	100	100	2
Total Credits										**8**

SEMESTER - IV

CodeNo.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
MF XXX	Dissertation	0	0	24	-	-	-	600	600	12
Total Credits										**12**

CREDIT MATRIX

Category	Credits to be earned				
	Sem- I	**Sem - II**	**Sem- III**	**Sem - IV**	**Total**
Core Courses	12	08	-	-	20
Elective Courses	06	09	-	-	15
Software/ Laboratory	04	04	-	-	08
Seminar	-	-	02	-	02
Dissertation	-	-	06	12	18
Total Credits	22	21	08	12	**63**

DEPARTMENT OF MECHANICAL ENGINEERING

M. Tech. (MECHANICAL ENGINEERING)

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY
Ichchhanath, Dumas Road,
Surat- 395007, Gujarat, India

COURSE STRUCTURE FOR
M. TECH.(MECHANICAL ENGINEERING)

SEMESTER – I

Code No.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
ME XXX	**Core 1** Numerical Methods and Computations	3	1	0	3	100	25	-	125	4
ME XXX	**Core 2** Computer Aided Engineering	3	0	2	3	100	-	50	150	4
ME XXX	**Core 3** Advanced Thermal and Fluid Engineering	3	0	2	3	100	-	50	150	4
ME XXX	**Elective 1** 1. Electric Vehicles and Advanced I C Engines 2. Additive Manufacturing 3. Advanced Mechanical Vibrations 4. Industrial Tribology 5. Power Plant Engg	3	0	0	3	100	-	-	100	3
ME XXX	**Elective 2** 1. Optimization Techniques 2. Industrial Robotics 3. Concurrent Engineering 4. Computational Fluid Dynamics 5. Design of Refrigeration and Air Conditioning Systems 6. Operation Planning and Control	3	0	0	3	100	-	-	100	3
ME XXX	**Software Practice I**	0	0	4	0	-	-	100	100	2
ME XXX	**Laboratory Practice**	0	0	4	0	-	-	50	50	2
Total Credits										**22**
Total Contact Hrs Per Week 28 Hrs										

SEMESTER – II

Code No.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
ME XXX	**Core 4** Computer Integrated Manufacturing	3	0	2	3	100	-	50	150	4
ME XXX	**Core 5** Mechanical Design Analysis	3	1	0	3	100	25	-	125	4
ME XXX	**Elective 3** 1. Renewable Energy Systems 2. Design of Pressure Vessels & Piping 3. Theory and Design of Cryogenic Systems 4. Quality Engineering and Management 5. Advanced Welding Technology	3	0	0	3	100	-	00	100	3
ME XXX	**Elective 4** 1. Design of Experiments 2. Mechanics of Composite Laminates 3. Combustion 4. Design of Heat Exchangers 5. Non Destructive Techniques	3	0	0	3	100	-	-	100	3
ME XXX	**Institute Elective** 1. Industrial Safety 2. Intelligent Manufacturing Systems 3. Energy Conservation, Management and Audit 4. Energy and Buildings 5. Instrumentation and Experimental Methods	3	0	0	3	100	-	-	100	3
MEXXX	**Communication Skill**	0	0	2	0	-	00	50	50	1
ME XXX	**Mini Project**	0	0	4	2	-	-	50	50	2
Total Credits										**20**
Total Contact Hrs per Week 24 Hrs										

SEMESTER – III

Code No.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
ME XXX	Dissertation Preliminaries	0	0	12	-	-	-	300	300	6
ME XXX	Seminar	0	0	4	-	-	-	100	100	2
Total Credits										**8**

SEMESTER - IV

Code No.	Subject	L	T	P	Exam Scheme				Total	Credits
					Theory		Tuto.	Pract.		
					Hrs.	Marks	Marks	Marks		
ME XXX	Dissertation	0	0	24	-	-	-	600	600	12
Total Credits										**12**

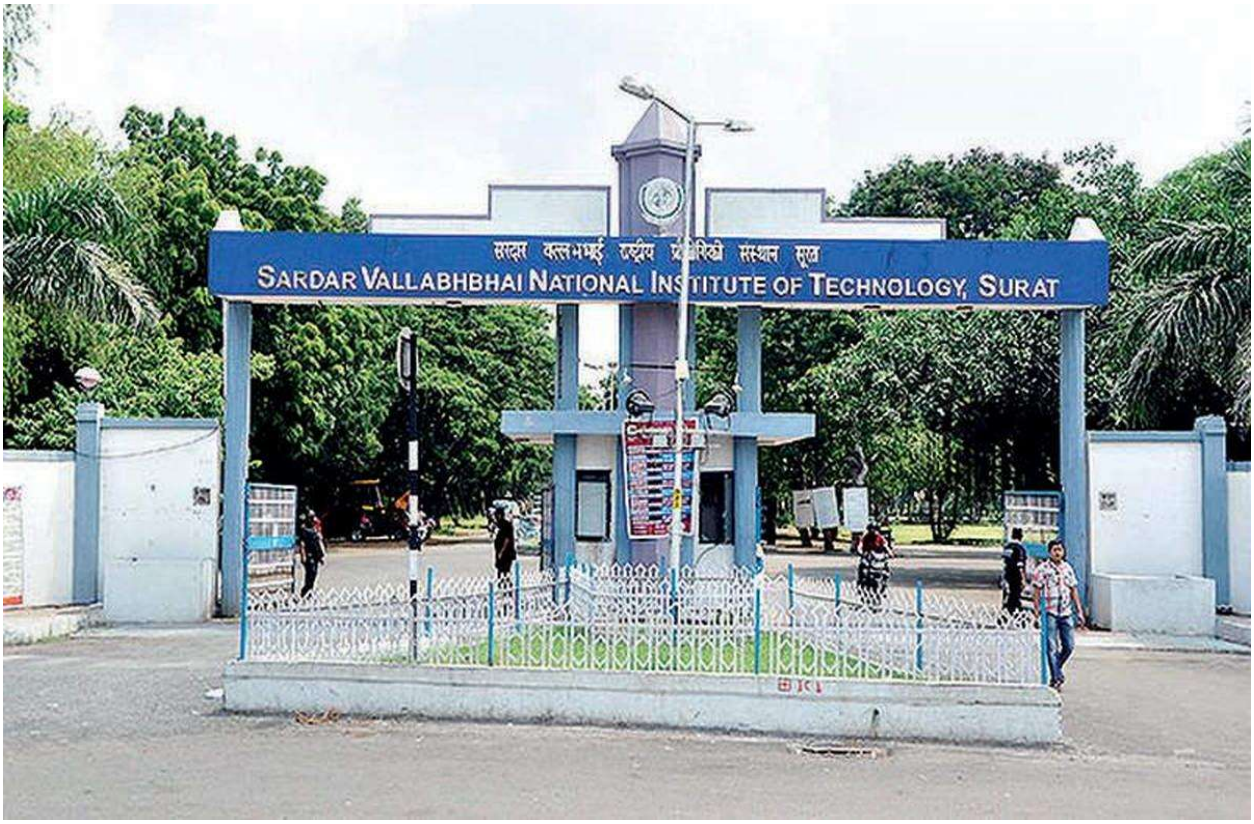
Total Credits: 22 + 20 + 8 + 12 = 62

CREDIT MATRIX

Category	Credits to be earned				
	Sem- I	Sem - II	Sem- III	Sem - IV	Total
Core Courses	12	08	-	-	20
Elective Courses	06	09	-	-	15
Software/ Laboratory	02+02	--	-	-	04
Communication Skill	--	01	--	--	01
Mini Project	--	02	--	--	02
Seminar	-	-	02	-	02
Dissertation	-	-	06	12	18
Total Credits	22	20	08	12	**62**

DEPARTMENT OF MECHANICAL ENGINEERING

M.TECH. (THERMAL SYSTEMS DESIGN)



SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY
Ichchhanath, Surat-395007, Gujarat, India
www.svnit.ac.in

Teaching Scheme M. Tech.-I (Thermal System Design)

Semester-I

Sr. No.	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	**Core-1** Numerical Methods and Computations		4	3	1	0	100	25	0	125
2	**Core-2** Advanced Thermodynamics		4	3	1	0	100	25	00	125
3	**Core-3** Transport Phenomena -I		4	3	1	0	100	25	00	125
4	Core Elective-1 • Design of Refrigeration and Air-conditioning systems • Bio-Mass conversion systems • Electro-Chemical Energy Storage Systems • Environmental pollution and control • Jet and Rocket Propulsion		3	3	0	0	100	0	00	100
5	Core Elective-2 • Electric Vehicles and Advanced I C Engines • Gas dynamics and compressible fluid Flow • Analysis and design of Thermal Turbo Machines • Measurements and data analysis in Thermal engineering • Finite element Method in Thermal Engineering		3	3	0	0	100	0	00	100
6	Computational Laboratory – 1		2	0	0	4	0	0	100	100
7	Experimental Laboratory -1		2	0	0	4	0	0	100	100
	Total		**22**	15	03	08	500	75	200	775
	Total Contact Hours per week			26						

Semester-II

Sr. No.	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	**Core-4** Transport Phenomena -II		4	3	1	0	100	25	00	125
2	**Core-5** Energy conversion systems		4	3	1	0	100	25	00	125
3	**Core Elective -3** • Design of heat exchangers • Theory and design of cryogenic systems • Combustion • Biofluidic and Bioheat Transfer • Turbulence and Turbulent Flows		3	3	0	0	100	0	00	100
4	**Core Elective-4** • Renewable energy systems • Flow and Flame Diagnostics • Transport in Porous Media • Nanofluid and its applications in thermal systems • Industrial Refrigeration		3	3	0	0	100	0	00	100
5	**Institute Elective** • Computational Fluid Dynamics • Optimization techniques • Energy conservation, management and audit • Fundamentals of Electric Vehicles		3	3	0	0	100	0	00	100
6	Computational Laboratory – 2		2	0	0	4	0	0	100	100
7	Experimental Laboratory - 2		2	0	0	4	0	0	100	100
	Total		**21**	**15**	**2**	**8**	**500**	**50**	**200**	**750**
	Total Contact Hours per week				**25**					

Semester - III

Sr. No.	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1.	Dissertation Preliminaries	ME	6	0	0	12	0	0	300	300
2.	Seminar	ME	2	0	0	4	0	0	100	100
	Total		08	0	0	16	0	0	400	400

Semester - IV

Sr. No.	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1.	Dissertation	ME	12	0	0	24	0	0	600	600

Total Credits: 22 + 21 + 08 + 12 = 63 credits

Credit Matrix

Category	Credit to be earned				
	Sem - I	Sem – II	Sem – III	Sem – IV	Total
Core Courses	12	08	-	-	20
Elective Courses	06	09	-	-	15
Software/Laboratory	04	04	-	-	08
Seminar	-	-	02	-	02
Dissertation	-	-	06	12	18
Total Credits	22	21	08	12	**63**

SCHEME AND SYLLABI

for

Master of Technology (Turbomachines)

Department of Mechanical Engineering

S. V. National Institute of Technology,

Surat – 395007, Gujarat, India

COURSE STRUCTURE FOR M. TECH. –I (TURBOMACHINES)

SEMESTER – I

Sr. No.	Code No.	Subject	Teaching Scheme			Exam Scheme			Total	Credits
			L	T	P	Theory Marks	Tuto. Marks	Pract. Marks		
1.	ME 6XX	**Core-1** Fluid Dynamics for Turbomachinery	3	1	0	100	-	-	100	4
2.	ME 6XX	**Core-2** Applied Gas Dynamics	3	1	0	100	-	-	100	4
3.	ME 6XX	Core-3 Thermodynamics and Heat Transfer for Turbomachinery	3	1	0	100	-	-	100	4
4.	ME 6xx	**Core Elective-1**	3	0	0	100	-	-	100	3
5.	ME 6xx	**Core Elective-2**	3	0	0	100	-	-		3
6.	ME 6XX	Software Practice– I (Turbomachines)	0	0	4	-	-	100	100	2
7.	ME 6XX	Laboratory Practice – I (Turbomachines)	0	0	4	-	-	100	100	2
		Tota1				500	-	200		22

Core Elective -1

1	**Combustion (ME6XX)**	4	**Design of Reacting Systems (ME6XX)**
2	**Nonlinear Dynamics and Chaos (ME6XX)**	5	**Atomization and Sprays (ME6XX)**
3	**Jet and Rocket Propulsion (ME6XX)**	6	

Core Elective -2

1	**Measurements and Data Analysis (ME6XX)**	4	**Unconventional Turbomachines (ME6XX)**
2	**Energy and Exergy Analysis of Turbomachines (ME6XX)**	5	**Hydrogen Energy Applications To Propulsion And Future Modes of Transport (ME6XX)**
3	**Rotor Dynamics, Vibration and Stress Analysis (ME6XX)**	6	

SEMESTER – II

Sr. No.	Code No.	Subject	Teaching Scheme			Exam Scheme			Total	Credits
			L	T	P	Theory Marks	Tuto. Marks	Pract. Marks		
1.	ME 6XX	**Core-4** Design of Thermal Turbomachines	3	1	0	100	-	-	100	4
2.	ME 6XX	**Core-5** Design of Hydro Turbomachines	3	1	0	100	-	-	100	4
3.	ME 6XX	**Core Elective-3**	3	0	0	100	-	-	100	3
4.	ME 6xx	**Core Elective-4**	3	0	0	100	-	-	100	3
5.	ME 6xx	Institute Elective- 1	3	0	0	100				3
6.	ME 6XX	Software Practice– II (Turbomachines)	0	0	4	-	-	100	100	2
7.	ME 6XX	Laboratory Practice – II (Turbomachines)	0	0	4	-	-	100	100	2
		Total				500		200		21

Core Elective -3

1	**Computational Fluid Dynamics(ME6XX)**	4	**Turbulence and Turbulent Flows (ME6XX)**
2	**Lifecycle Analysis of Turbomachines (ME6XX)**	5	**Cascade Aerodynamics (ME6XX)**
3	**Micro Hydro-turbine (ME6XX)**	6	**Condition Monitoring and Fault Diagnosis of Rotating Machinery (ME6XX)**

Core Elective -4

1	**Thermo-acoustic Instabilities (ME6XX)**	4	**Turbulent Combustion (ME6XX)**
2	**Flow and Flame Diagnostics (ME6XX)**	5	**Fundamentals of Solid Propellant and Multi-phase Combustion**
3	**Hydrodynamic Stability (ME6XX)**		

Institute Elective -1

1	**Optimisation Techniques (ME6XX)**		
2	**Finite Element Methods (ME6XX)**		
3	**Multi-phase Flow and Heat Transfer (ME6XX)**		
4	**Wind Energy Conversion System (ME6XX)**		

SEMESTER – III

Sr. No.	Code No.	Subject	Teaching Scheme			Exam Scheme			Total	Credits
			L	T	P	Theory Marks	Tuto. Marks	Pract. Marks		
1.	ME 801	Dissertation Preliminaries	0	0	12	-	-	300	300	6
2.	ME 803	Industry Based Seminar	0	0	04	-	-	100	100	2
		Total								8

SEMESTER – IV

Sr. No.	Code No.	Subject	Teaching Scheme			Exam Scheme			Total	Credits
			L	T	P	Theory Marks	Tuto. Marks	Pract. Marks		
1.	ME 802	Dissertation	0	0	24	-	-	600	600	12
		Total								12